In the Claims

Claims 10-12, 14-18, 20-38 and 40-42 have been amended as shown below. Underlines indicate insertions; ~~strikeouts~~ or double brackets [[ ]] indicate deletions.

The invention claimed is:

1. (Original). A system for generating a target geometric model from a source geometric model, comprising:

a server having processing circuitry and an operation manager configured to compare source geometric data of each of a plurality of features in a source geometric model with target geometric data of respective features in a target geometric model, and operative to identify discrepancies in respective features therebetween;

said server configured to rectify discrepancies in a feature after generating the feature and prior to generating another feature among the plurality of features;

a communication link;

at least one client communicating with the server over the communication link; and

an interrupt interface provided by one of the at least one client and the server and operative to notify a user of the server's inability to automatically generate an accurate representation of a feature of the source geometric model in the target geometric model.

2. (Original). The system of claim 1, wherein the server is configured to iterate, a predetermined number of time, the process of generating a feature using alternative measurements during each iteration.

3. (Original). The system of claim 2, wherein the interrupt interface notifies a user of the server's inability to rectify a discrepancy in a feature after performing the predetermined number of iterations to accurately generate the feature.

4. (Original). The system of claim 1, wherein the interrupt interface notifies a user of the presence of any identified discrepancies that are not automatically corrected by the server in response to comparing the geometric data.

5. (Original). The system of claim 1, wherein the operation manager includes a computer readable medium having computer programmable logic embodied therein which when executed by the processing circuitry translates each feature of a source geometric model received from a source within a client/server environment to a respective feature in a target geometric model.

6. (Original). The system of claim 1, wherein the source geometric data is derived from the source geometric model and the target geometric data is derived from the target geometric model.

7. (Original). The system of claim 5, wherein the computer readable medium comprises a memory coupled to the processing circuitry to store the source geometric model and the target geometric model.

8. (Original). The system of claim 5, wherein the computer programmable logic is associated with the processing circuitry and the interrupt interface, the computer programmable logic including a production control module operative to implement staged translation of the source geometric model into the target geometric model.

9. (Original). The system of claim 8, wherein the staged translation comprises:

computer programmable logic for extracting comparison reference data from the source geometric model in a source computer aided design (CAD) system;

computer programmable logic for generating a target geometric model in a target CAD system;

computer programmable logic for comparing reference data from the source geometric model with corresponding reference data in the target geometric model;

upon identification of a discrepancy in a feature of the target geometric model, computer programmable logic for iterating, a predetermined number of times, the process of generating the feature in the target geometric model; and

computer programmable logic for displaying the discrepancy to an operator at the client in the event of the server's failure to automatically correct a discrepancy in a feature of the target geometric model.

10. (Currently amended). The system ~~as in~~ of claim 9, wherein the reference data for each feature from the source geometric model is compared with corresponding geometry in the translated target geometric model in order to identify discrepancies therebetween ~~therein~~.

11. (Currently amended). The system of ~~as in~~ claim 10, wherein the computer programmable logic for comparing reference data comprises program code for extracting point cloud data from the pre-existing source geometric model and comparing the extracted point cloud data with geometry in the translated target geometric model.

12. (Currently amended). The system of ~~as in~~ claim 10, wherein the computer programmable logic for comparing reference data comprises program code for extracting point cloud data from the translated target geometric model from different points of reference excluding the referenced point cloud data as in claim 11, and comparing the said newly extracted point cloud data with geometry in the pre-existing source geometric model.

13. (Original). The system as in claim 9, wherein the computer programmable logic for generating a target geometric model comprises computer programmable logic for generating a user interrupt at the interrupt interface responsive to identifying a problem, in the event of the server's failure to automatically correct the identified problem, in generating the target geometric model.

14. (Currently amended). A system for facilitating a staged translation of ~~translating~~ a pre-existing source geometric model ~~file~~ in a first format in the source CAD system, to a translated target geometric model ~~file~~ in a second format in the target CAD system, comprising:

a server configured to compare data of each of a plurality of features generated in a first format with translated target geometric data of respective features generated in a second format, the server operative to identify discrepancies in respective features therebetween[[;]] , and ~~said server~~ further configured to automatically correct discrepancies of a feature, generated in the second format prior to generating another feature; and

at least one client communicating with the server over a communication link to enable a user to interact with the staged translation.

15. (Currently amended). The system of ~~as in~~ claim 14, further comprising:

an interrupt interface configured to notify a user of the server's inability to automatically generate an accurate representation of a feature, generated ~~in~~ from the first format, ~~in~~ into the second format.

16. (Currently amended). The system of ~~as in~~ claim 14, wherein the server includes a storage device to store data related to each of the plurality of features.

17. (Currently amended). The system of ~~as in~~ claim 14, wherein the first and second formats are selected from the group having Pro/E, SDRC, Unigraphics, CATIA, SolidWorks, CATIA V5, and combinations thereof.

18. (Currently amended). A multi-staged feature based translation system, comprising:

a client/server environment;

a client provided in the environment and having an interrupt interface; and

a server provided in the environment and communicating with the client via the environment and having processing circuitry and an operation manager configured to compare source geometric data related to each of a plurality of features in a source geometric model with target geometric data for corresponding features in a translated target geometric model[[,]] ;

wherein the [[said]] server is further configured to correct feature discrepancies after generating the feature and prior to generating another feature.

19. (Original). The system of claim 18, further comprising:

an interrupt interface operative to notify a user of the presence of an identified discrepancy in response to the server's inability to correct the feature discrepancies after a predetermined number of iterations, using alternative measurements during each iteration, to accurately generate the feature.

20. (Currently amended). The system of ~~as in~~ claim 18, wherein the operation manager further comprises program code for performing actions, including:

evaluating architecture of the pre-existing source geometric model including decomposing ~~a model of~~ the pre-existing source geometric model.

21. (Currently amended). The system of ~~as in~~ claim 18, further comprising:

computer programmable logic for examining constructions history detailing the manner in which the pre-existing source geometric model was built.

22. (Currently amended). The system of ~~as in~~ claim 18, further comprising:

computer programmable logic for extracting the source geometric data for each of the plurality of features from the pre-existing source geometric model.

23. (Currently amended). The system of ~~as in~~ claim 18, further comprising:

computer programmable logic for generating the target geometric data based upon a construction history used to create each of the plurality of features of the pre-existing source geometric model.

24. (Currently amended). A method of generating a translated target geometric model from a pre-existing source geometric model, comprising:

a) providing ~~a server and a client of~~ a computational geometry system ~~having a user interface~~;

b) using the computational geometry system, extracting source geometric data for each of a plurality of features from the pre-existing source geometric model file;

c) using a target computer aided design (CAD) system, generating a desired translated target geometric model for each of the plurality of features having respective target geometric data, wherein a selected feature is generated using a first set of construction rules;

d) detecting at least a) a discrepancy between [[a]] the selected feature from the ~~source~~ target geometric data and a corresponding feature from the ~~target~~ source geometric data and b) a problem in generating the desired translated target geometric model; and

e) iterating step c), using ~~different measurements during each iteration~~ a second set of construction rules to generate the selected feature in the desired translated target geometric model, in the event of a discrepancy between [[a]] the selected feature from the ~~source~~ target geometric data and a corresponding feature from the ~~target~~ source geometric data in order to rectify the discrepancy.

25. (Currently amended). The method of ~~as in~~ claim 24, further comprising:

performing point cloud analysis in the event of detecting discrepancies; and

generating an interrupt at the user interface if the discrepancy is not rectified after performing a predetermined number of iterations using alternative measurements during each iteration.

26. (Currently amended). The method of ~~as in~~ claim 25, wherein after generating an interrupt, interrupting generation of the desired translated target geometric model.

27. (Currently amended). The method of ~~as in~~ claim 25, wherein after generating an interrupt, rectifying the discrepancy via the user interface, and facilitating the user to help fix the said discrepancy before further continuation and/or completion of translation.

28. (Currently amended). The method of ~~as in~~ claim 25, wherein after rectifying the discrepancy, clearing the interrupt via the user interface.

29. (Currently amended). The method of ~~as in~~ claim 28, wherein after clearing the interrupt, continuing to generate the desired target geometric model.

30. (Currently amended). The method of ~~as in~~ claim 25, wherein generating an interrupt comprises stopping generation of the desired target geometric model and displaying a notice to a user at the user interface requesting assistance with one of the discrepancy(s) and the problem.

31. (Currently amended). The method of ~~as in~~ claim 30, wherein generating the desired target geometric model comprises substantially duplicating a process used to create the pre-existing source geometric model based at least in part, on identified architecture, mathematical basis, and definition of the geometry of the pre-existing source geometric model.

32. (Currently amended). The method of ~~as in~~ claim 24, wherein, prior to extracting source geometric data, receiving a pre-existing source geometric model at the server and storing the said pre-existing source geometric model in memory of the server.

33. (Currently amended). The method of ~~as in~~ claim 32, wherein extracting source geometric data comprises evaluating the pre-existing source geometric model to determine architecture and construction history.

34. (Currently amended). The method of ~~as in~~ claim 25, wherein the user interface comprises an interrupt interface of a user display on the client.

35. (Currently amended). The method of ~~as in~~ claim 25, wherein generating an interrupt comprises providing visual cue within the target CAD system to remove the discrepancy and help fix the geometry.

36. (Currently amended). A feature based translation system for generating a desired translated target geometric model from a pre-existing source geometric model, comprising:

a processor having processing circuitry configured to compare source geometric data of each of a plurality of features in a pre-existing source geometric model with target geometric data of respective features in a translated target geometric model, and operative to identify discrepancies in respective features therebetween;

the processor further configured to rectify discrepancies in a feature after generating the feature and prior to generating another feature among the plurality of features.

37. (Currently amended). The system of claim 36, further comprising:

an interrupt interface operative to notify a user of the processor's inability to automatically generate an accurate representation of a feature of the pre-existing source geometric model in the translated target geometric model.

38. (Currently amended). The system of claim 36, wherein the processor is configured to iterate, a predetermined number of times using different ~~measurements~~ methods during each iteration, the process of generating a feature.

39. (Original). The system of claim 37, wherein the interrupt interface notifies a user of the processor's inability to rectify a discrepancy in a feature after performing the predetermined number of iterations to accurately generate the feature.

40. (Currently amended). The system of claim 37, wherein the interrupt interface notifies a user of the presence of any identified discrepancies that are not automatically corrected by the processor in response to comparing the geometric data of the pre-existing source geometric model and the desired target geometric model.

41. (Currently amended). The system of claim 37, further comprising a computer readable medium having computer programmable logic embodied therein which

when executed by the processing circuitry translates each feature of a pre-existing source geometric model to a respective feature in a translated target geometric model.

42. (Currently amended). The system of claim 36, wherein the process is further configured to invoke point cloud analysis subsequent to comparing geometric data of pre-existing source and translated target models and identifying discrepancies in geometric features therebetween.